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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/771,674

02/05/2004

Tomoyuki Ohzeki

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37398

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10/31/2006

TAIYO CORPORATION

401 HOLLAND LANE

#407

ALEXANDRIA, VA. 22314

EXAMINER

CHEA, THORL

ART UNIT

PAPER NUMBER

1752

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/771,674

Applicant(s)

OHZEKI ET AL.

Examiner

Thorl Chea

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This first office action is responsive to the communication on February 5, 2004; claims 1-17 are pending in this instant application.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Okada et al (US Patent No. 6,120,983), Tzuzuki (US Patent No. 5,677,121), Siga et al (US Patent No. 4,332,889) and Tsukada et al (US 2002/0058220A1).

Okada et al discloses a photothermographic material substantially as claimed. See the compound having adsorptive to silver halide and reducible group in columns 12-20, compounds 1 to 55; photosensitive silver halide in column 36, lines 3-35 including silver iodide or silver

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iodobromide having silver iodide content of 0.1 to 40 mole %; silver salt of an organic acid including silver behenate in column 37, lines 20-41; preferred polymer such as polyvinyl butyral in column 41, lines 13-30; the silver halide doped with iridium complex in column 36, lines 18-35. Tzusuki (US Patent No. 5,677,121) discloses non-photosensitive silver salt comprising silver salt of behenic acid from 35 to 90 mole % to provide a heat developable material with excellent storability to ordinary aging, excellent image storability, high sensitivity and low Dmax. See the disclosure in the abstract. Siga disclose in column 6, lines 43-68 disclose the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5." Tsukada et al discloses a binder for a photothermographic material having glass transition temperature from  $-20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  to provide a photothermographic material with good storability and good coating property.

Okada et al disclose a material substantially as claimed. The material taught therein includes the silver salt of an organic acid include silver behenate, silver iodide or silver bromiodide

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having iodide content up to 40 mole %, preferred binder such as polyvinyl butyral and the compound having a group adsorptive to silver halide and a reducible group. Okada my not specifically discloses the Tg of the binder, but the polyvinyl butyral is the preferred binder and used in this present invention such as claimed in claim 8. The glass transition temperature of 45 deg. C is inherent to the polyvinyl butyral binder. Tsuzki discloses the optimized range of silver behenate in the silver salt of an organic acid within the claimed range to provide a photothermographic material with excellent storability to ordinary aging, excellent image storability, high sensitivity and low Dmax. Siga discloses the optimize range of silver iodide content in a heat developable material to balance the sensitivity and the stability of the raw image forming material. Moreover, Tsukada et al discloses a binder for a photothermographic material having glass transition temperature from  $-20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  to provide a photothermographic material with good storability and good coating property. Therefore, it would have been obvious at the time the invention was made to optimize the amount of silver behenate such as taught in Tsuzuki in combination with the preferred binder included polyvinyl butyral taught in Okada or in Tsukada et al to form a material taught in Okada with an expectation of achieving a material with excellent storability to ordinary aging, excellent image storability, high sensitivity , low Dmax and good coating property, and thereby provide a material as claimed. The worker of ordinary skill in the art would have selected the silver halide iodide or silver bromide such as presented in claim 3-4 suggested in Okada et al due to the teaching of Siga et al.

5. Claims 9-11, 15-18 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okada et al (US Patent No. 6,120,983).

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See the compound having adsorptive to silver halide and reducible group in columns 12-20, compounds 1 to 55; photosensitive silver halide in column 36, lines 3-35 including silver iodide or silver iodobromide having silver iodide content of 0.1 to 40 mole %; silver salt of an organic acid including silver behenate in column 37, lines 20-41; preferred polymer such as polyvinyl butyral in column 41, lines 13-30; the silver halide doped a metal complex including with an amount of  $1 \times 10^{-9}$  to  $1 \times 10^{-2}$  mole/mole of silver including iridium complex in column 36, lines 3-35. Okada discloses a photothermographic material containing compound having adsorptive to silver halide and reducible group, a photosensitive silver halide, an organic silver salt, a reducing agent, binder and the iridium. Therefore, the invention lacks novelty. Alternatively, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to select the metal taught therein with an expectation of achieving a material with an increased sensitivity. The limitation in claims 15-16 are related to the claiming of a material by a process and fail to further limit the composition of the claimed material.

6. Claims 12-14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al (US Patent No. 6,120,983) as applied to claims 9-13, 15-18 above, and further in view of Kimura (US 6,413,711).

Okada et al fails to disclose the compound in claims 12-13 and the spectral sensitizing dye in claim 14, but these compounds has been known in Goto et al (US 2003/0194638), Ohezi (US 2002/0197570) and Kimura (US 6,413,711). See Goto pages 1-3; Ohzeki in the abstract and spectral sensitizing dye, compound (2a) to (2d) in the abstract. It would have been obvious to the worker of ordinary skill in the art to use the compound taught either in Goto or Ohzeki in the material of Okada et al to increase the sensitivity thereof and the use of the infrared spectral

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sensitizing dye taught in Kimura to spectrally sensitize the material of Okada in the infrared region, and thereby provide a material as claimed.

### ***Response to Arguments***

7. Applicant's arguments filed August 14, 2006 have been fully considered but they are not persuasive. The applicants argue that Okada et al (US Patent No. 6,120,983) do not disclose the reducing group represented by formula A which is a hydroxyurea and 1-phenyl-3-pyrazolidone group, and moreover, the compound having an adsorptive group to silver halide and a reducing group in the present invention is a chemical sensitizer, which is increase sensitivity notwithstanding the presence or absence of sensitizing dye.

Okada et al (US Patent No. 6,120,983) discloses the compound of containing a group absorptive which is a heterocyclic group substituted with a mercapto group and a reducing group, which is "hydroxyurea" in columns 13-20. See for instance the compound 7, in column 13, that containing a heterocyclic group having a mercapto group (-SH) and -NH(C=O)NHOH. Therefore, the compound as claimed has been known in Okada et al. The argument with respect to the use of the compound as chemical sensitizer is not persuasive since the compound has similar structure would behave similarly.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tch *tlh*  
2006-10-17

*Thorl Chea*  
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Primary Examiner  
Art Unit 1752